IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jaworski et al.
Serial No. :
Filed :
Title : FATTY ACID ELONGASES

Art Unit : Unknown
Examiner : Unknown

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the Specification:

Please insert the following paragraph after the title on page 1 of the application:

--Cross Reference To Related Applications

This application is a divisional of and claims priority under 35 U.S.C. §120 to U.S. application 08/868,373, filed June 3, 1997.--

Please replace the paragraph bridging pages 7 and 8 with the following paragraph:

--In some embodiments, a polynucleotide of the invention encodes analogs or derivatives of a polypeptide having the deduced amino acid sequence of Figs. 4, 6, 8, 10, 12, 14 or 16. Such fragments, analogs or derivatives include, for example, naturally occurring allelic variants, non-naturally occurring allelic variants, deletion variants and insertion variants, that do not substantially alter the function of the polypeptide.--

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June 18, 2001
Date of Deposit

Signature

Vince Defante
Typed or Printed Name of Person Signing Certificate

Please replace the paragraph on page 12, lines 16-22 with the following paragraph:

--A nucleic acid construct of the invention comprises a polynucleotide as disclosed herein linked to another, different polynucleotide. For example, a full-length KAS coding sequence may be operably fused in-frame to a nucleic acid fragment that encodes a leader sequence, secretory sequence or other additional amino acid sequences that may be usefully linked to a polypeptide or peptide fragment.--

Please replace the paragraph on page 13, lines 18-23 with the following paragraph:

--One may use a polynucleotide disclosed herein for cosuppression as well as for antisense inhibition. Cosuppression of genes in plants may be achieved by expressing, in the sense orientation, the entire or partial coding sequence of a gene. See, e.g., WO 94/11516, incorporated herein by reference.--

Please replace the paragraph on page 17, lines 8-14 with the following paragraph:

--The open reading frame of the *Arabidopsis FAE1* gene was amplified directly by PCR, using *Arabidopsis thaliana cv.* Columbia genomic DNA as a template, pfu DNA polymerase and the following primers: 5'CTCGAGGAGCAATGACGTCCGTTAA-3' and 5'-CTCGAGTTAGGACCGACCGTTTTG-3' (SEQ ID NOS:15 and 16, respectively). The PCR product was blunt-end cloned into the *Eco* RV site of pBluescript (Stratagene, La Jolla, CA).--

Please replace the paragraph on page 28, lines 3-13 with the following paragraph:

--The open reading frames (ORFs) for the EL2, EL4 and EL7 clones were amplified by PCR. The EL2 ORF was cloned into λYES using the primers: CTCGAGCAAGTCCACTACCACGCA and CTCGAGCGAGTCAGAAGGAACAAA (SEQ ID NOS:17 and 18, respectively). The EL4 ORF was cloned into pYEUra3 using the primers: GATAATTTAGAGAGGCACAGGGT and GTCGACACAAGAATGGGTAGATCCAA (SEQ ID NO:19 and 20, respectively). The EL7 ORF was cloned into pYEUra3 using the primers: CAGTTCCTCAAACGAAGCTA and GTCGACTTCTCAATGGACGGTGCCGGA (SEQ ID NOS:21 and 22, respectively). Amplified products were cloned into pYEUra3 under the control

of, and 3' to, the GAL1 promoter. The resulting plasmids were transformed into yeast as described in Example 1.--

Please add the enclosed Sequence Listing to the application after the figures.

In the Claims:

Please cancel claims 1-9, 14-15, and 18-30.

The pending claims, including claim 10 as amended, are as follows.

Please amend claim 10 as follows:

10. (Amended) An isolated polypeptide selected from the group consisting of: a polypeptide having at least 80% sequence identity to SEQ ID NO:2, a polypeptide having at least 80% sequence identity to SEQ ID NO:4, a polypeptide having at least 80% sequence identity to SEQ ID NO:6, a polypeptide having at least 80% sequence identity to SEQ ID NO:12, and a polypeptide having at least 80% sequence identity to SEQ ID NO:14.

11. The polypeptide of claim 10, wherein said amino acid sequence is SEQ ID NO:2.

12. The polypeptide of claim 10, wherein said amino acid sequence is SEQ ID NO:4.

13. The polypeptide of claim 10, wherein said amino acid sequence is SEQ ID NO:6.

16. The polypeptide of claim 10, wherein said amino acid sequence is SEQ ID NO:12.

17. The polypeptide of claim 10, wherein said amino acid sequence is SEQ ID NO:14.

Please add the following new claims:

31. An isolated polypeptide having the amino acid sequence of SEQ ID NO:8.

32. An isolated polypeptide having the amino acid sequence of SEQ ID NO:10.

33. A transgenic plant containing a nucleic acid that encodes a polypeptide selected from the group consisting of: a polypeptide having at least 80% sequence identity to SEQ ID NO:2, a polypeptide having at least 80% sequence identity to SEQ ID NO:4, a polypeptide having at least 80% sequence identity to SEQ ID NO:6, a polypeptide having at least 80% sequence identity to SEQ ID NO:12, and a polypeptide having at least 80% sequence identity to SEQ ID NO:14.

34. The plant of claim 33, wherein expression of said nucleic acid is tissue-specific.

35. The plant of claim 34, wherein said expression is epidermal cell-specific expression.

36. The plant of claim 34, wherein said expression is seed-specific expression.

37. The plant of claim 33, wherein said plant has altered levels of very long chain fatty acids in seeds compared to the levels in a plant lacking expression of said nucleic acid.

38. A transgenic plant containing a nucleic acid that encodes a polypeptide having the amino acid sequence of SEQ ID NO:8.

39. A transgenic plant containing a nucleic acid that encodes a polypeptide having the amino acid sequence of SEQ ID NO:10.

40. A method of altering the levels of very long chain fatty acids in a plant, comprising the step of:

introducing a nucleic acid construct into a plant, wherein said nucleic acid construct encodes a polypeptide selected from the group consisting of: a polypeptide having at least 80% sequence identity to SEQ ID NO:2, a polypeptide having at least 80% sequence

identity to SEQ ID NO:4, a polypeptide having at least 80% sequence identity to SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, a polypeptide having at least 80% sequence identity to SEQ ID NO:12, and a polypeptide having at least 80% sequence identity to SEQ ID NO:14, wherein said construct is expressed and wherein said polypeptide is effective for altering the levels of very long chain fatty acids in said plant.

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REMARKS

Applicants respectfully request entry of the amendments and remarks submitted herein. Claims 1-9, 14-15, and 18-30 have been canceled. Claim 10 has been amended herein, and new claims 31-40 have been added. Therefore, claims 10-13, 16-17 and 31-40 are currently pending. Attached is a marked-up version of the changes being made by the current amendments. Reconsideration of the pending application is respectfully requested.

Applicants submit herewith a paper copy of the Sequence Listing and a request to transfer the computer readable form of the Sequence Listing from the parent application to the present application. Applicants have amended the specification to include appropriate sequence identifiers. Applicants have further amended the specification to correct obvious typographical errors. No new matter is introduced by these amendments.

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CONCLUSION

Applicant asks that pending claims 10-13, 16-17, and 31-40 be examined. The filing fee enclosed reflects the claim amendments herein. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: June 18, 2001

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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In some embodiments, a polynucleotide of the invention encodes analogs or derivatives of a polypeptide having the deduced amino acid sequence of Figs. 4, 6, 8, 10, 12, 14 or 16. Such fragments, analogs[on] or derivatives include, for example, naturally occurring allelic variants, non-naturally occurring allelic variants, deletion variants and insertion variants, that do not substantially alter the function of the polypeptide.

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Claims 1-9, 14-15, and 18-30 have been cancelled.

Claim 10 has been amended as follows:

10. (Amended) An isolated polypeptide [having an amino acid sequence]selected from the group consisting of: [an amino acid sequence substantially identical] a polypeptide having at least 80% sequence identity to SEQ ID NO:2, [an amino acid sequence substantially identical] a polypeptide having at least 80% sequence identity to SEQ ID NO:4, [an amino acid sequence substantially identical] a polypeptide having at least 80% sequence identity to SEQ ID NO:6, [an amino acid sequence substantially identical to SEQ ID NO:8, an amino acid sequence substantially identical to SEQ ID NO:10, an amino acid sequence substantially identical] a polypeptide having at least 80% sequence identity to SEQ ID NO:12, and [an amino acid sequence substantially identical] a polypeptide having at least 80% sequence identity to SEQ ID NO:14.

The following new claims have been added.

31. An isolated polypeptide having the amino acid sequence of SEQ ID NO:8.

32. An isolated polypeptide having the amino acid sequence of SEQ ID NO:10.

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least 80% sequence identity to SEQ ID NO:2, a polypeptide having at least 80% sequence identity to SEQ ID NO:4, a polypeptide having at least 80% sequence identity to SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, a polypeptide having at least 80% sequence identity to SEQ ID NO:12, and a polypeptide having at least 80% sequence identity to SEQ ID NO:14, wherein said construct is expressed and wherein said polypeptide is effective for altering the levels of very long chain fatty acids in said plant.

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